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File: USPT

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TITLE: Methods for immobilizing nucleic acids on a gel substrate

Detailed Description Text (45):

Four types of polyacrylamide or polydimethylacrylamide gels for regio-selective immobilization of short oligonucleotides have been designed for use with modified nucleic acid molecules. Two of these gels (or supports) contain amino or aldehyde groups, allowing for coupling with modified oligonucleotides bearing aldehyde or amino groups, respectively. The other supports are based on an acrylamide gel activated with glutaraldehyde or a hydroxyalkyl-functionalized gel treated with mesyl chloride. The inventors have found that dimethylacrylamide-based supports confers additional utility inasmuch as it facilitates subsequent treatment of the gel with organic solvents and other compounds. As such, the invented process for modifying nucleic acids and gels to facilitate covalent bonding are applicable in either polar or nonpolar environs.